

# FLOOD ALARM

## UAL 358 - SAL 500 Eng.

- Activates alarm if water on floor
- Inputs: up to 3 sensors for water detection
- Outputs : – 1 SPDT relay  
– 1 On-Off optoisolated electronic control
- Alarm in three-module enclosure for mounting on DIN rail
- Power supply 230 Volt ~



### 1. APPLICATION

The flood alarm is for use in spaces where water leakages could occur; leakages which, if not dealt with in time, could lead to hazardous situations or cause serious material damage. A typical use for this alarm is to detect the presence of water on the floor of a heating plant. The alarm comprises two units:

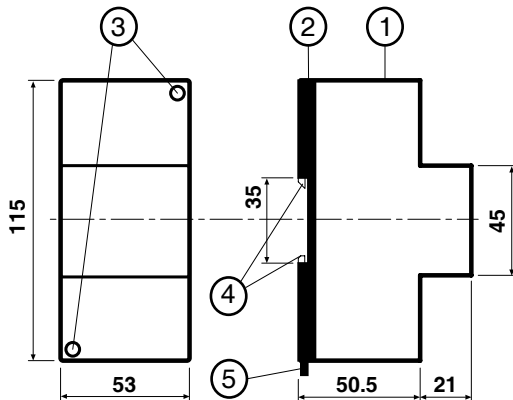
- **UAL 358** : the detector which signals the alarm and sends the output instructions,
- **SAL 500** : this is the sensor which monitors the presence of water or other liquids having a **minimum conductivity of 60 MicroSiemens**.

The mineral water with a low content of residues has a conductivity of about 150 MicroSiemens.

Normal aqueduct water has a minimum of about 100 MicroSiemens.

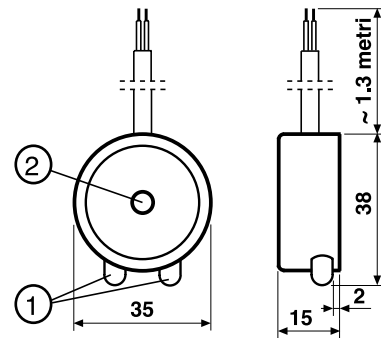
To measure the de-mineralised water contact **COSTER technicians**

### 2. OVERALL DIMENSIONS - UAL 358 DETECTOR



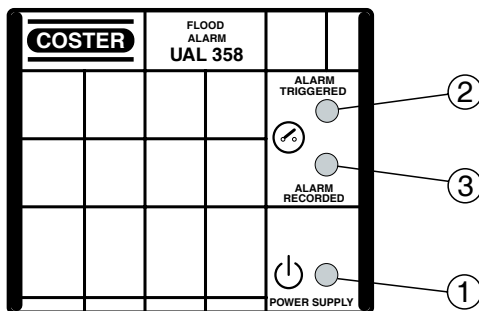
- 1 – Protective cover for electronic components
- 2 – Base with transformer, relay and terminal blocks
- 3 – Screws for securing base and cover
- 4 – DIN rail securing elements
- 5 – DIN rail release lever

### 3. DIMENSIONS - SAL 500 SENSOR



- 1 – Water detector poles
- 2 – Screw-hole for wall mounting

### 4. FLOOD ALARM FACIA



- 1 – Power supply LED
- 2 – Alarm status LED (Alarm = LED lit)
- 3 – Alarm memory LED (Alarm = LED lit)

### 5. TECHNICAL DATA

#### • Electrical

Power supply	230 V ~ ± 10%
Frequency	50...60 Hz
Consumption	2,5 VA
Radio disturbances	VDE 0875/0871
Vibration test	with 2g (DIN 40046)

#### Voltage-free output contacts:

Maximum switched voltage	250 V ~
Maximum switched current	5 (1) A

#### Control optoisolated output :

Maximum switched voltage	30 V –
Maximum switched current	3 mA

Construction standards Italian Electrotech. Committee (CEI)

#### • UAL 358 detector

Mounting	on DIN 35 rail
Protection	IP 40
Materials:	
Base	NYLON
Cover	ABS
Ambient temperature:	
Operating	0...45 °C
Storage	– 25...+60 °C
Ambient humidity	Class F DIN 40040
Weight	0.27 kg

#### • SAL 500 sensor

Protection	IP 67
Enclosure	PVC
Weight	70 g

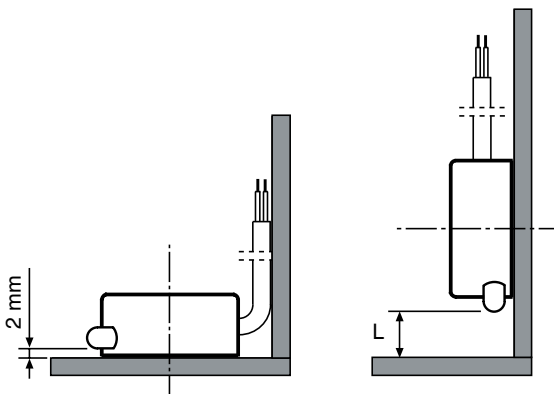
## 6. INSTALLATION

### UAL 358 DETECTOR

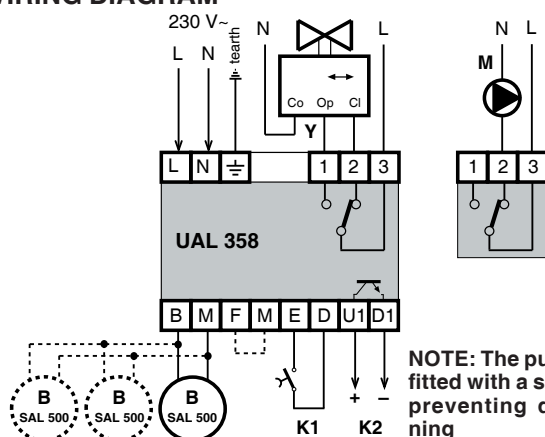
This must be installed in a dry location that respects the ambient conditions given under 5. TECHNICAL DATA. If installed in a location classified as "Hazardous" it must be installed in a cabinet for electrical equipment constructed according to the regulations in force for the class of danger concerned. The controller can be mounted on a DIN rail and housed in a standard DIN enclosure.

### SAL 500 SENSOR

This can be secured to the floor and in this position the poles detect the presence of water at a height of two millimetres. If it is preferred to measure the water at a different height, the sensor can be mounted vertically on a wall so that the poles are at the desired height (L).



## 7. WIRING DIAGRAM



The relay switch is shown in the "Detector not powered" condition.

In the alarm state 2-3 = closed

L – 230 V ~

N – Neutral

B – Water-detecting sensor (up to three sensors can be connected in parallel)

M – Pump

Y – Shut-off valve

K1 – Alarm reset

K2 – On-Off alarm output to be used for input D...E of controllers with C-Bus

F-M – Without jumper = normal sensitivity

– With jumper = reduced sensitivity

⊥ – Terminal to be connected, for safety reasons, to plant earth

## 8. ELECTRICAL CONNECTIONS

Proceed as follows:

- Separate base from cover after loosening the securing screws (2.3).
- Mount the base on the DIN rail and check that it is firmly anchored by the securing elements (2.4).
- Carry out the wiring according to the diagram and in compliance with the regulations in force and using :
  - 1.5 mm<sup>2</sup> cables for power supply, relay outputs and EARTH connection.
  - 1 mm<sup>2</sup> cables for the other connections.

NB: Maximum distance of water-detecting sensor: 50 metres

- Apply power (230 V~) and check its presence across terminals L and N.
- Remove power, replace cover on base and secure it with the two screws supplied (2.3).

You are advised not to insert more than two cables in a single terminal and, if necessary, to use an external junction box.

## 9. OPERATION

Under normal operating conditions (detector powered and not in alarm state) **the output relay is live** (3-1 closed and 3-2 open) and the LEDs "Alarm triggered" and "Alarm recorded" on the fascia are unlit. When the water level reaches the two poles of a sensor, the detector switches the relay output (3-2 closed and 3-1 open), closes the optisolated switch and switches on the two LEDs on the fascia. The relay output contacts can be used to operate a shut-off valve or a pump for removing any water collected on the floor.

The K2 electronic optisolated switch can, on the other hand, be connected to a device with C-Bus communication system which will transmit the alarm to the telemanagement PC.

If the water falls below the level of the two sensor poles, the optisolated switch re-opens, the "Alarm triggered" LED goes out, the relay remains in the alarm state and the "Alarm recorded" LED remains lit. This state continues until an engineer presses the K1 reset button and so restores the detector to its rest position.

If the space where the sensor is sited is particularly damp, unnecessary alarms may be triggered. The sensitivity can be reduced by inserting a jumper between terminals F and M.

In the presence of oily residues on the surface of the water, the sensor, even after the water has been removed, may remain in the alarm state: in this event it is necessary to clean the poles with an absorbent cloth..

### Amendment to data sheet

Date	Revision No.	Page	Section	Amendment description
30.10.07 AM	<b>01</b>	1	7. WIRING DIAGRAM	The numbers of the terminals shown in the actuators have been eliminated
17.09.09 AM	<b>02</b>	2	1. APPLICATION	Entered intervention threshold
22.02.10 MZ	<b>03</b>	2	7. WIRING DIAGRAM	The letters of jumper terminals have been modified
16.12.10 VM	<b>04</b>	2	7. WIRING DIAGRAM	Note added on operation with pump